

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

Claims 1 and 2 (Canceled).

3. (Previously presented) A method of performing channel estimation, the method comprising:

receiving a time domain signal r ;

multiplying, element-to-element, the sequences \underline{m} and r by a chirp waveform, the chirp waveform being based on the length of a fast Fourier transform (FFT) and denoting the resulting sequences as \underline{m}_w and r_w respectively, where \underline{m} is a midamble sequence; and

creating a chirp sequence \underline{v} based on the chirp waveform.

4. (Original) The method of claim 3 wherein the chirp waveform is $W^{n/P}$ for $n=0,1,2,\dots,P-1$ where $P = 456$ for burst types 1/3 or $P = 192$ for burst type 2, and $W = e^{-j\frac{2\pi}{P}}$

5. (Original) The method of claim 4 wherein the chirp sequence $\underline{v} = W^{-(n-P/2)^2/P}$ for $n=0,1,2,\dots,2P-2$.

Claims 6 and 7 (Canceled).

8. (Previously presented) A receiver for performing channel estimation, the receiver configured to:

receive a time domain signal r and multiply, element-to-element, the sequences m and r by a chirp waveform, the chirp waveform being based on the length of a fast Fourier transform (FFT) and denoting the resulting sequences as m_w and r_w respectively, where m is a midamble sequence; and

create a chirp sequence v based on the chirp waveform.

9. (Previously presented) The receiver of claim 8 wherein the chirp waveform is $W^{n^2/2}$ for $n=0,1,2,\dots,P-1$ where $P = 456$ for burst types 1/3 or $P = 192$ for burst type 2, and $W = e^{-j\frac{2\pi}{P}}$.

10. (Previously presented) The receiver of claim 9 wherein the chirp sequence $v = W^{-(m-P+1)^2/2}$ for $n=0,1,2,\dots,2P-2$.

Claims 11 and 12 (Canceled).

13. (Previously presented) A wireless transmit/receive unit (WTRU) for performing channel estimation, the WTRU configured to:

receive a time domain signal r and multiply, element-to-element, the sequences m and r by a chirp waveform, the chirp waveform being based on the length of a fast Fourier transform (FFT) and denote the resulting sequences as m_w and r_w respectively, where m is a midamble sequence; and

create a chirp sequence v based on the chirp waveform.

14. (Original) The WTRU of claim 13 wherein the chirp waveform is $W^{n/2}$ for $n=0,1,2,\dots,P-1$ where $P = 456$ for burst types 1/3 or $P = 192$ for burst type 2, and $W = e^{-j\frac{2\pi}{P}}$.

15. (Original) The WTRU of claim 14 wherein the chirp sequence $\underline{v} = W^{-(n-P+1)^2/2}$ for $n=0,1,2,\dots,2P-2$.

Claims 16 and 17 (Canceled).

18. (Previously presented) A base station (BS) for performing channel estimation, the BS configured to:

receive a time domain signal \underline{r} and multiply, element-to-element, the sequences \underline{m} and \underline{r} by a chirp waveform, the chirp waveform being based on the length of a fast Fourier transform (FFT) and denote the resulting sequences as \underline{m}_w and \underline{r}_w respectively, where \underline{m} is a midamble sequence; and

create a chirp sequence \underline{v} based on the chirp waveform.

19. (Original) The BS of claim 18 wherein the chirp waveform is $W^{n/2}$ for $n = 0, 1, 2, \dots, P-1$ where $P = 456$ for burst types 1/3 or $P = 192$ for burst type 2, and $W = e^{-j\frac{2\pi}{P}}$.

20. (Original) The BS of claim 19 wherein the chirp sequence $\underline{v} = W^{-(n-P+1)^2/2}$ for $n = 0, 1, 2, \dots, 2P-2$.

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Claims 21-33 (Canceled).